

SARIAH AL SAATI

PhD student in Topology in Condensed Matter

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Techs: Python, Java, C, C++, C#, Javascript, ... [See github page](#): SariahAlSaati

Spoken Languages: French (native), English (C1/C2), Arabic (native), Japanese (B2)

Summary

Phd student on topology in condensed matter, currently working on local properties of orbital magnetism in topological insulators, looking for a postdoctoral position in a European university. Passionate and versatile physicist with expertise spanning planetology, transport in magnetic materials, topology in condensed matter. Strong programming and engineering background with a deep interest in fundamental physics and mathematics (algebraic topology). Experienced educator with 8 years of voluntary teaching, dedicated to sharing knowledge and fostering learning across diverse disciplines.

Education

M2 International Center of Fundamental Physics - École normale supérieure - Paris

2021 - 2022

· Fundamental Physics master in Quantum Physics. Dominant in Topology in Condensed Matter.

Space Engineer's Degree - École polytechnique - France

2018 - 2022

· **Various programming projects:** Game dev., Web dev., Software dev. for drone swarm controle, Algorithmic dev. for network communication optimization.

· **3rd year:** Advanced courses in Fundamental Physics, Astrophysics and Space Engineering.

· **2nd year:** [Fundamental Physics](#) (Quantum P., Relativity, Electromagnetism, Statistical P.), [Mathematics](#) (Optimization, Control, Statistics, Functional Analysis, Differential Calculus), [Computer Science](#) (Algorithm Design and Analysis, Fundamentals of Computer Science: Logic, Models and Computing).

· **1st year:** Military service as French army officer and deputy head of section in Civil Defense, Corsica, France.

Research Experience

PhD student - Centre de Physique Théorique - CNRS. *Supervisor: Karyn Le Hur.*

06/2022 - 09/2025

· On local properties of orbital magnetism in topological materials. In collaboration with Pr. Frédéric Piéchon, LPS, and under the supervision of Pr. Karyn Le Hur, CPHT. [In preparation.](#)

· [1] [Le Hur and Al Saati](#), Comptes Rendus. Physique, 2024 on light properties of topological semimetal, under the supervision of Pr. Karyn Le Hur, CPHT.

· [2] [Wegrowe, Zhou & Al Saati](#), PRB, 2024 on classical out-of-equilibrium transport, in collaboration with Pr. Jean-Eric Wegrowe, LSI.

· [3] [Le Hur and Al Saati](#), PRB, 2023 on a proposal for a topological semimetal in graphene under the supervision of Pr. Karyn Le Hur, CPHT.

Research Assistant - Institut de Recherche en Astrophysique et Planétologie - CNRS

03/2021 - 08/2021

· On the properties of Magnetic coupling of the magnetospheres of Jupiter and Saturn to planetary rotation. Under the supervision of Pr. Michel Blanc, IRAP, using NASA's satellite Juno's in-situ measurements.

· [4] [Clément et al.](#), JGR - Space Physics, 2025 on profiles of conductances of giant planets.

· [5] [Louis et al.](#), JGR - Space Physics, 2023 on radio emissions driven by Jovian satellites.

· [6] [Al Saati et al.](#), JGR - Space Physics, 2022 on Magnetosphere-Ionosphere-Thermosphere coupling on Jupiter and the origins of polar auroras on Jupiter.

Space Research Project - Thales Alenia Space

2020 - 2021

· Mathematical research on the subject of collision avoidance maneuvers in orbit for nanosatellites

· Optimization theory, Control theory, Space mechanics, Software development

Space projet manager - DESTINY - BEXUS - Swedish National Space Agency

2019 - 2020

· Space mission manager: mission design, operation (Stratospheric Ballon), science data analysis, [see Doc.](#)

· Awarded best poster: [7] [Al Saati et al.](#), Proc. 25th ESA PAS symposium, 2022 and attached conf. paper